



TITLE:

# Use of Ordinary Plate Glass as a Gamma-Ray Dosimeter

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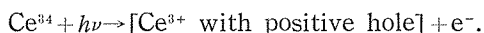
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## ABSTRACTS

tive in preventing formation of either of those structural imperfections associated with trapped electrons or positive holes. As to the valency changes of cerium ion itself, a small part of trivalent cerium ions was found to lose their electron upon irradiation by the reaction



### Use of Ordinary Plate Glass as a Gamma-Ray Dosimeter

Megumi TASHIRO, Sumio SAKKA and Naohiro SOGA

*Yogyo Kyokaishi (Journal of the Ceramic Association, Japan)*, 68, 191 (1960)

The gamma-ray dose rate distribution in a small closed space, 80mm in dia., 110mm in height, was determined by the use of small pieces of ordinary plate glass, 15×6×1.72mm, as a dosimeter. The technique of the measurement was described. The advantageous features of the glass dosimeter, i.e., its small size, convenient usage, and preciseness in the measurement, were discussed. A brief description of the construction of a small Co-60 irradiator, in which the measurement was made, was appended.

### Mechanical Strength of Polycrystalline Materials Produced from Platinum Containing Glasses

Megumi TASHIRO, Sumio SAKKA and Masamichi WADA

*Yogyo Kyokaishi (Journal of the Ceramic Association, Japan)*, 68, 223 (1960)

Rindone found that a small amount of platinum (0.01%) introduced into a glass of the composition  $\text{Li}_2\text{O} \cdot 4\text{SiO}_2$  acts as a nucleating agent on reheating, converting the whole mass into an assembly consisting of extremely small crystals (G.E. Rindone, *J. Am. Ceram. Soc.*, 41, 41 (1958)).

This paper presents the results of the investigation of authors which covers the nucleation by platinum for glasses containing  $\text{Li}_2\text{O}$ ,  $\text{MgO}$ ,  $\text{Al}_2\text{O}_3$ , and  $\text{SiO}_2$ . The bending strength was used for the evaluation of the effect of the nucleating agent.

(1) **Optimum amount of platinum.** The glasses of the composition,  $\text{Li}_2\text{O}$  12.5,  $\text{K}_2\text{O}$  2.5,  $\text{Al}_2\text{O}_3$  4,  $\text{SiO}_2$  81% by weight, added, respectively, with 0, 0.001, 0.01, 0.1% of platinum were formed into the specimens of the size 50×5×2.5mm. Taking the density increase as a reference the effect of the concentration of platinum on the devitrification of the specimens under a stepwise heat treatment was investigated. It was found out that 0.01% was sufficient for the completion of devitrification.

The bending strength of the devitrified specimen increased with increasing platinum content. Taking into consideration of the cost of platinum the authors